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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,736	08/31/2001	Horst-Udo Hain	1454.1067	8402

21171 7590 07/27/2005

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EXAMINER	
AZAD, ABUL K	
ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/942,736	HAIN, HORST-UDO	
	Examiner	Art Unit	
	ABUL K. AZAD	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-11 and 13-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-11 and 13-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) . Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on May 2, 2005.

2. Claims 1, 3, 5-11 and 13-18 are pending in this action. Claims 1, 3, 10, 11 and 18 have been amended. Claims 2, 4 and 12 have been canceled.

3. In view of applicant's arguments the double patenting rejection has been withdrawn as set forth in the previous Office Action.

4. The applicant's arguments with respect to claims 1, 3, 5-11 and 13-18 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the Response to the Arguments section.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5, 6, 8-11, 13, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al. (US 6,076,060).

As per claim 1, Lin teaches, "a method for speech synthesis by a grapheme/phoneme conversion", comprising:

"searching for subwords of a given word in a database which contains phonetic transcriptions of words, the given word having a subword registered in the database, and a further constituent which is not registered in the database" (Fig. 3, elements 30, 31 and 32);

"selecting a phonetic transcription from the database for the subword" (Fig. 3, element 20);

"phonetically transcribing the further constituent of the given word with the aid of an out- of-vocabulary (OOV) treatment, the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed as a function of the phonetic transcription of the subword" (Fig. 3, element 20 and Fig. 3, element 32); and

"combining the phonetic transcription of the subword and the phonetic transcription of the further constituent" (col. 14, lines 23-56).

As per claim 3, Lin teaches, "wherein the given word has at least first and second subwords registered in the database, a search is made for both the first and second subwords in the database, a phonetic transcription is selected from the database for both the first and second subwords, and the phonetic transcription of the first and second subwords and the phonetic transcription of the further constituent are combined" (Fig. 3, elements 30 and 31),

"the further constituent in the given word is arranged between the first subword and the second subword, and the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed as a function of the phonetic

transcription of the first subword and the phonetic transcription of the second subword" (Fig. 3, elements 30, 31 and 20).

As per claim 5, Lin teaches, "wherein the searching for subwords in the database is pedormed by searching for subwords which have a prescribed minimum length" (col. 7, lines 24-42).

As per claim 6, Lin teaches, "wherein if a plurality of subwords are found for the same word part, the longest subword is selected therefrom" (col. 11, lines 12-34).

As per claim 8, Lin teaches, "wherein the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a rule-based method" (Fig. 3, element 27).

As per claim 9, Lin teaches, "wherein the subword is found in a first database, and the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a second database which contains the phonetic transcription of filling particles normally used in the case of composite words" (Fig. 3, element 30, 31 and 32).

As per claim 10, 11, 13, 14 and 18, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1, 3, 5, 6, 8 and 9.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 7 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 6,076,060) as applied to claims 1 and 14 above, and further in view of Karaali et al. (US 5,913,194).

As per claims 7 and 15, Lin does not explicitly teach, phonetic transcription further performed by a neuron network. However, Karaali teaches, phonetic transcription performed by a neuron network (Abstract). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to use neural network because Karaali teaches his invention reduce size of the neural network without substantial degradation in the quality of the generated synthetic speech (col. 2, lines 8-12).

As per claim 16, Lin teaches, "wherein the out-of-vocabulary (OOV) treatment for phonetic transcription of the further constituent is performed by a rule-based method" (Fig. 3, element 27).

As per claim 17, Lin teaches, "wherein the subwords are found in a first database, and the out-of-vocabulary treatment for phonetic transcription of the further constituent is performed by a second database which contains the phonetic

transcription of filling particles used in the case of composite words" (Fig. 3, elements 30, 31, 32 and 20).

Response to Arguments

9. The applicant argues, "It appears that the Examiner believes that suffixes are registered in the suffix rule set 30 and prefixes are registered in the prefix rule set 31. Referring to column 1, lines 54-60, it is questioned whether a rule set is an equivalent to a dictionary database. It further appears that the Examiner believes that the infix rule set 32 is used for out-of-vocabulary treatment. Infix rule set 32 is described at column 8, lines 15-21.

The Examiner's treatment of the reference is inconsistent. The rule sets 30, 31 and 32 should each be considered a vocabulary database or an out-of-vocabulary processor. It is inconsistent to pick one rule set as a vocabulary database and pick another rule set as an out- of-vocabulary processor. It would be more consistent to argue that all of the rule sets are equivalent to a vocabulary database or to argue that all of the rule sets are equivalent to an out- of-vocabulary processor. However, at least with regard to the out-of-vocabulary processor, the reference is deficient.

The independent claims have been amended to recite that out-of-vocabulary treatment of the further constituent is performed as a function of the phonetic transcription of the subword. This feature, which previously appeared in dependent claim 2, for example, is described on page 2, at paragraph (008) and on page 5 at paragraph (0026) of the application. In Lin et al., when grapheme/phoneme conversion

is performed for an infix constituent of a word, Lin et al. does not use information available from the phonetically transcribed preceding prefix or following suffix constituent of the word. In the Office Action, the Examiner addresses the limitations of claim 2, which have been incorporated into the independent claims, by citing Fig. 3 element 20 of Lin et al. However, element 20 in Fig. 3 is simply a phonemic code string buffer. It is not seen that this buffer has anything to do with performing an out-of-vocabulary treatment as a function of the phonetic transcription of the subword".

The examiner disagrees with the applicant's above assertion because Lin teaches all the claimed limitations. The examiner's treatment of the reference is not inconsistent because rule set 30 and 31 is considered as a vocabulary database and 32 as out-of- vocabulary processor according to applicant's definition describes in the specification (see specification page 4, lines 19-36).

The applicant misinterpreted Lin reference; Lin does use information avail from the phonetically transcribed preceding prefix or following suffix constituent of the word (see col.3, lines 29-44).

Here element 20 is used to show for out-of-vocabulary, as already indicated that element 32 is used to show out-of-vocabulary processor.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABUL K. AZAD whose telephone number is (571) 272-7599. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ABUL K. AZAD
Primary Examiner
Art Unit 2654

July 18, 2005